

WHAT IS CLAIMED IS:

1. A liquid crystal display device comprising:  
a liquid crystal display panel having a plurality  
of signal lines, a plurality of scanning lines, and a  
5 plurality of display pixels arrayed in a matrix and  
provided respectively near cross-points between the  
signal lines and the scanning lines through switching  
elements; and

a driver which supplies the plurality of signal  
10 lines with a display signal in a field period, and  
which scans the plurality of scanning lines, to apply  
the display signal to the plurality of display pixels,  
wherein

the driver applies a predetermined initialization  
15 signal voltage to the display pixels, and thereafter  
applies the display signal in at least one signal  
application period set within the field period.

2. The device according to claim 1, wherein  
the liquid crystal display panel includes a  
20 plurality of pixel electrodes arrayed in a matrix  
through the switching elements, and common electrodes  
opposed to the pixel electrodes, and

the display pixels comprise the pixel electrodes,  
the common electrodes, and liquid crystal sandwiched  
25 between the pixel electrodes and the common electrodes.

3. The device according to claim 1, wherein each  
of the switching elements of the liquid crystal display

panel includes a thin film transistor.

4. The apparatus according to claim 1, wherein  
the driver applies the initialization signal  
voltage to the display pixels and thereafter applies  
5 the display signal after a predetermined hold time, in  
the signal application period in the field period, and  
the hold time is set to a time equal to or longer  
than a voltage-write response time of the display  
pixels.

10 5. The device according to claim 1, wherein  
the initialization signal voltage in the driver  
has a value equal to or higher than a maximum voltage  
value of the display signal.

15 6. The device according to claim 1, wherein  
the driver applies the initialization signal  
voltage and the display signal to the display pixels  
connected to the scanning lines of the liquid crystal  
display panel, at a predetermined time interval,  
sequentially for every one of the scanning lines, in  
20 the signal application period in the field period, and  
the time interval is set to a value at which  
timings of applying the initialization signal voltage  
and the display signal to every of the display pixels  
connected to each of the scanning lines do not overlap  
25 each other.

7. The device according to claim 1, wherein  
application timing is set such that the driver

applies the initialization signal voltage simultaneously to all the display pixels of the liquid crystal display panel, and thereafter applies the display signal to the display pixels connected to the scanning lines of the liquid crystal display panel, at a predetermined time interval, sequentially for every one of the scanning lines, in the signal application period in the field period.

8. The device according to claim 1, wherein the driver provides three signal application periods in one field period.

9. The device according to claim 8, wherein the display signal comprises first, second, and third color component signals, and

the driver applies the initialization signal voltage and thereafter applies any one of the first, second, and third color component signals, to the display pixels connected to the scanning lines of the liquid crystal display panel, sequentially for every one of the scanning lines, in each of the signal application periods of the field period.

10. The device according to claim 9, further comprising an illumination light source capable of controlling light emission color,

the illumination light source being controlled to have light emission color corresponding to any one of the first, second, and third color component signals

that is applied by the driver in each of the signal application period.

11. The device according to claim 8, wherein of the display signal, the first color component signal is a red component signal, the second color component signal is a green component signal, and the first color component signal is a blue component signal.

12. A drive control method for a liquid crystal display device which has a plurality of signal lines, a plurality of scanning lines, and a plurality of display pixels arrayed in a matrix and provided respectively near cross-points between the signal lines and the scanning lines through switching elements, and which supplies the plurality of signal lines with a display signal in a field period and scans the plurality of scanning lines, to apply the display signal to the plurality of display pixels, comprising:

providing at least one signal application period in the field period;

applying a predetermined initialization signal voltage to the display pixels in the signal application period; and

applying the display signal to the display pixels after completion of the applying of the initialization signal voltage in the signal application period.

13. The method according to claim 12, further comprising providing of a predetermined voltage hold

time after completion of the applying of the  
initialization signal voltage to the display pixels,  
wherein

the applying of the display signal includes  
5 applying the display signal to the display pixels after  
the voltage hold time has passed after the applying of  
the initialization signal voltage, and

the hold time is set to a time equal to or longer  
than a voltage-write response time of the display  
10 pixels.

14. The method according to claim 12, wherein  
the initialization signal voltage has a value  
equal to or higher than a maximum voltage value of the  
display signal.

15 15. The method according to claim 12, wherein the  
applying of the initialization signal voltage includes  
applying the initialization signal voltage to the  
display pixels connected to the scanning lines,  
sequentially for every one of the scanning lines,  
20 the applying of the display signal includes  
applying the display signal to the display pixels  
connected to the scanning lines, sequentially for every  
one of the scanning lines, and

application timings of applying the initialization  
25 signal voltage and the display signal for every one of  
the scanning line are set so as not to overlap each  
other.

16. The method according to claim 12, wherein  
the applying of the initialization signal voltage  
includes applying the initialization signal voltage  
simultaneously to all the display pixels connected to  
the scanning lines.

17. The method according to claim 12, wherein  
the providing of the signal application period in  
the field period includes providing three signal  
application periods in one field period.

18. The method according to claim 17, wherein  
the display signal comprises first, second, and  
third color component signals, and  
the applying of the initialization signal voltage  
includes applying the initialization signal voltage  
simultaneously to the plurality of display pixels  
connected to the scanning lines, in each of the signal  
application periods, and

the applying of the display signal includes  
applying any of the first, second, and third color  
component signals, to the display pixels connected to  
the scanning lines, sequentially for every one of the  
scanning lines, in each of the signal application  
periods.

19. The method according to claim 18, further  
comprising controlling light emission color of an  
illumination light source, wherein

the controlling of the light emission color

includes controlling the light emission color of the light source so as to correspond to any of the first, second, and third color component signals that is applied to the display pixels in the applying of the display signal.

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